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(54) **Massage device for furniture for sitting or reclining**

Massagevorrichtung für Stühle oder Liegemöbel

Appareil de massage pour chaises ou sièges inclinables

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- **PATENT ABSTRACTS OF JAPAN** vol. 016, no. 207 (C-0941), 18 May 1992 (1992-05-18) & JP 04 038905 A (FUJI IRIYOUKI:KK), 10 February 1992 (1992-02-10)
- **PATENT ABSTRACTS OF JAPAN** vol. 1997, no. 07, 31 July 1997 (1997-07-31) & JP 09 075413 A (MATSUSHITA ELECTRIC WORKS LTD), 25 March 1997 (1997-03-25)

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EP 1 738 736 B1

Description

[0001] The invention relates to a massage device for furniture for sitting or reclining, with a basic frame, a massage unit which has a drivable massage element and at least one guide profile along which the massage unit can be moved by a motor in order to carry out a massage, the guide profile having a curvature adapted to the contour of the spinal column of a person to be massaged.

[0002] Such a massage device is described in DE-A1-195 05 445 and makes targeted massage of the back region and also of the neck region possible. However, items of furniture for sitting and reclining which are equipped with massage devices are usually used only when a massage is to be carried out.

[0003] US-A1-2004/0127823 relates to a seat with a massage mechanism having push rollers revolving by rotation of a rod and applying thereby a finger pressure to the back of a user. When the rotation is stopped and the push rollers are arranged in the rear, the weight of the sitter is received by the rod and a lumbar support. Furthermore, the rod and the push rollers can be moved to recessed sections, in which the sitter can use the seat without feeling the presence of the rod and the push rollers.

[0004] DE-U1-298 22 261 further discloses a drawing of a massage device which has a guide profile having a curvature adapted to the contour of the spinal column of a person to be massaged.

[0005] The object of the invention is to improve the massage device for furniture for sitting or reclining in such a way that for each region of the back the optimum pressure is exerted on the user's back and that the furniture for sitting or reclining also offers a high level of comfort when no massage is to be carried out.

[0006] This object is achieved according to the invention by the features of Claim 1.

[0007] The massage device according to the invention for furniture for sitting or reclining comprises a basic frame, a massage unit which has a drivable massage element and at least one guide profile along which the massage unit can be moved by a motor in order to carry out a massage, the guide profile having a curvature adapted to the contour of the spinal column of a person to be massaged. In this case the guide profile is divided into three regions, wherein in the first region the massage element of the massage unit enables a massage of the person located on the massage device, in the second region the massage element acts as a lordosis support and in the third region the massage element reaches a parked position in which it does not exert any pressure on the person.

[0008] Due to the special configuration of the guide profile the massage unit can be moved into a parked position when no massage is to take place. In this parked position the massage element is moved so far back from the person sitting on the item of furniture for sitting or reclining that no unpleasant pressure is exerted. For an-

atomically favourable seating, in the second region of the guide profile the massage element of the massage unit can act as a lordosis support. Therefore the furniture for sitting or reclining with such a massage device can also be used with great comfort when no massage is carried out.

[0009] In the massage device known from DE-A1-195 95 445 the guide profile designed so that the massage unit can only be moved in a range which is suitable for massage.

[0010] Further embodiments of the invention are the subject matter of the subordinate claims.

[0011] According to a particular embodiment of the invention, in order to move the massage unit along the guide profile a displacement means is provided which comprises a spindle which can be rotated by way of a drive and at least one nut which is displaceable along the spindle, the massage unit being connected to the at least one nut. In this case the massage unit can comprise a first part which can be moved in a straight line by way of a displacement means and a second part which retains the at least one massage element, wherein the second part is retained so as to be movable relative to the first part and is coupled to the at least one guide profile (3, 4).

[0012] Further variants and advantages of the invention are explained in greater detail with reference to the following description of an embodiment.

[0013] In the drawings:

Figure 1 shows a side view of the massage device according to the invention,

Figure 2 shows a three-dimensional representation of the massage device according to Figure 1, and

Figure 3 shows a three-dimensional partial representation of the massage unit in its parked position.

[0014] The massage device shown in the drawings for furniture for sitting or reclining basically comprises a basic frame 1, a massage unit 2 which has at least one drivable massage element 2a and two guide profiles 3, 4 along which the massage unit can be moved by a motor in order to carry out a massage. The guide profiles have a curvature which is adapted to the contour of the spinal column of a person to be massaged.

[0015] In the illustrated embodiment the two guide profiles 3, 4 form a part of the basic frame.

[0016] In order to move the massage unit 2 along the guide profiles 3, 4 a displacement means 5 is provided which comprises a spindle 5b which can be rotated by way of a drive 5a and two nuts 5c, 5d which are displaceable along the spindle, the massage unit 2 being connected to the two nuts.

[0017] Since the spindle 5b is of straight construction, the massage unit 2 can accordingly also be moved only a straight line. So that the massage elements 2a can nevertheless follow the contour of the guide profiles 3, 4

the massage unit has a first part 2b which can be moved in a straight line by way of the displacement means 5 and a second part 2c which retains the at least one massage element 2a, the second part being retained so as to be movable relative to the first part and coupled to the guide profiles 3, 4.

[0018] The relative movability of the two parts 2b, 2c can be achieved in different ways. Thus for example pivot levers may be considered. In the illustrated embodiment the two parts are formed by two housing parts which can be moved relative to one another by way of slots 2d and bolts 2e.

[0019] The coupling of the second part 2c to the guide profiles 3, 4 can for example take place by construction of the guide profiles as U profiles and the second part has rollers which are guided in the two guide profiles. In the illustrated embodiment the second part 2c likewise has rollers 6. Furthermore a pivot lever 7 with a pin 8 is pivotably retained on the axle of the roller 6. As can be seen in particular from Figure 3, the guide profile is disposed between the roller 6 and the pin 8. The clear distance between the roller and the pin is advantageously somewhat greater than the width of the guide profile lying between them, in order to enable operation with the least possible friction. Instead of the pin 8, naturally a corresponding spring could also be provided which is disposed so that it pushes both parts 2b, 2c together.

[0020] Depending upon the requirements, the massage unit 2 can be constructed in a manner which is known *per se*. In the illustrated embodiment two massage elements 2a are provided which can be driven by way of a motor 9. Tapping, kneading or stroking massages can for example be carried out depending upon the design.

[0021] The guide profiles 3, 4 have a curvature which is adapted to the contour of the spinal column of a person to be massaged in such a way that for each region of the back the optimum pressure is exerted on the user's back.

[0022] The guide profiles 3, 4 are divided into three regions, wherein the first region A is formed by the upper part, the second region B is formed by the part adjoining it at the bottom and the third region C is formed by the lowest part of the guide profile. If the massage unit is located in the first region A, which is indicated in Figure 1 by the positions 2.1a or 2.2a of the massage element 2a, a massage can be carried out on the person located on the massage device. If the massage unit is located in the second region B, as indicated by the position 2.3a of the massage element 2a, the massage unit acts as a lordosis support for the lumbar vertebral region. If the massage unit is moved completely downwards it is located in the third region C which forms a parked position in which the massage unit does not exert any pressure on the person.

[0023] By way of a control which is not shown in detail a massage function, a lordosis support or a stop function can be selected as required, wherein the massage unit moves into the first region A when the massage function is selected, into the region B when the lordosis support

is selected and into the third region C when the stop function is selected.

[0024] Depending upon the design of the massage unit different massages can be carried out when the massage function is selected. When the lordosis support is selected the massage unit can be moved as required into a predetermined position or moved gradually into the region B. When the stop function is selected the massage unit moves from the respective current position to its parked position (region C).

[0025] Advantageously a position sensor 10 is provided between the first and second regions so that the control recognises the lower end of the first region A or the upper end of the second region B and can limit the possible movement of the massage unit to the respective region.

[0026] The furniture for sitting or reclining which is equipped with the massage device described above enables not only a massage which is adapted to the contour of the user's back but also offers a suitable support in the lumbar vertebral region during sitting, when no massage is required. Furthermore, it is possible to move the massage unit into its parked position in which no pressure whatsoever is exerted on the person by the massage unit.

Claims

1. Massage device for furniture for sitting or reclining, with
 - a. a basic frame (1),
 - b. a massage unit (2) which has at least one drivable massage element (2a)
 - c. and at least one guide profile (3, 4) along which the massage unit can be moved by a motor - in order to carry out a massage -, the guide profile having a curvature adapted to the - contour of the spinal column of a person to be massaged,

characterised in that the guide profile is divided into three regions (A, B, C), wherein in the first region (A) the massage element (2a) of the massage unit enables a massage of the person located on the massage device, in the second region (B) the massage element (2a) acts as a lordosis support and in the third region (C) the massage element (2a) reaches a parked position in which it does not exert any pressure.

2. Massage device as claimed in Claim 1, **characterised in that** the first region (A) is formed by the upper part of the guide profile, the second region (B) by the part adjoining it at the bottom and the third region (C) by the lowest part of the guide profile.
3. Massage device as claimed in Claim 1, **character-**

ised in that in order to move the massage unit (2) along the guide profile (3, 4) a displacement means (5) is provided which comprises a spindle (5b) which can be rotated by way of a drive (5a) and at least one nut which is displaceable along the spindle, the massage unit being connected to the at least one nut.

4. Massage device as claimed in Claim 1, **characterised in that** the massage unit comprises a first part (2b) which can be moved in a straight line by way of a displacement means (5) and a second part (2c) which retains the at least one massage element (2a) and is in operative contact with the at least one guide profile (3, 4).
5. Massage device as claimed in Claim 4, **characterised in that** the second part (2c) is displaceably retained on the first part (2b).
6. Massage device as claimed in Claim 3 and 4, **characterised in that** two guide profiles (3, 4) are provided along which the massage unit (2) can be displaced.
7. Massage device as claimed in Claim 1, **characterised in that** the massage unit (2) is in operative contact with the guide profile (3, 4) by way of at least one roller (6).
8. Massage device as claimed in Claim 1, **characterised in that** the massage unit comprises at least one motor (9) for driving the at least one massage element (2a).
9. Massage device as claimed in Claim 1, **characterised in that** a position sensor (10) is provided which recognises the lower end of the first region.
10. Massage device as claimed in Claim 1, **characterised by** a control by which a massage function, a lordosis support or a stop function can be selected as required, wherein the massage unit moves into the first region (A) when the massage function is selected, into the second region (B) when the lordosis support is selected and into the third region (C) when the stop function is selected.

Patentansprüche

1. Massagevorrichtung für ein Sitz- oder Liegemöbel mit
 - a. einem Grundrahmen (1),
 - b. einer Massageeinheit (2), die wenigstens ein antreibbares Massageelement (2a) aufweist
 - c. und wenigstens einem Führungsprofil (3, 4), entlang dessen die Massageeinheit zur Durch-

führung einer Massage motorisch verfahrbar ist, wobei das Führungsprofil eine Krümmung aufweist, die an die Kontur der Wirbelsäule einer zu massierenden Personen angepasst ist,

dadurch gekennzeichnet, dass das Führungsprofil in drei Bereiche (A, B, C) unterteilt ist, wobei das Massageelement der Massageeinheit im ersten Bereich (A) eine Massage der auf der Massagevorrichtung befindlichen Person ermöglicht, im zweiten Bereich (B) als Lordosstütze arbeitet und im dritten Bereich (C) in eine Parkposition gelangt, in der das Massageelement keinen Druck ausübt.

2. Massagevorrichtung nach Anspruch 1, **dadurch gekennzeichnet, dass** der erste Bereich (A) durch den oberen Teil, der zweite Bereich (B) durch den sich unten daran anschließenden Teil und der dritte Bereich (C) durch den untersten Teil des Führungsprofils gebildet wird.
3. Massagevorrichtung nach Anspruch 1, **dadurch gekennzeichnet, dass** zum Verfahren der Massageeinheit (2) längs des Führungsprofils (3, 4) eine Verstelleinrichtung (5) vorgesehen ist, die eine über einen Antrieb (5a) drehbare Spindel (5b) und wenigstens eine längs der Spindel verstellbare Mutter umfasst, wobei die Massageeinheit mit der wenigstens einen Mutter verbunden ist.
4. Massagevorrichtung nach Anspruch 1, **dadurch gekennzeichnet, dass** die Massageeinheit einen ersten über eine Verstelleinrichtung (5) geradlinig verschiebbaren Teil (2b) und einen zweiten, das wenigstens eine Massageelement (2a) haltende Teil (2c) umfasst, wobei der zweite Teil relativ zum ersten Teil beweglich gehaltert und mit dem wenigstens einen Führungsprofil (3, 4) gekoppelt ist.
5. Massagevorrichtung nach Anspruch 4, **dadurch gekennzeichnet, dass** der zweite Teil (2c) verschiebbar am ersten Teil (2b) gehaltert ist.
6. Massagevorrichtung nach Anspruch 3 und 4, **dadurch gekennzeichnet, dass** zwei Führungsprofile (3, 4) vorgesehen sind, längs derer die Massageeinheit (2) verstellbar ist.
7. Massagevorrichtung nach Anspruch 1, **dadurch gekennzeichnet, dass** die Massageeinheit (2) über wenigstens eine Rolle (6) mit dem Führungsprofil (3, 4) in Wirkkontakt steht.
8. Massagevorrichtung nach Anspruch 1, **dadurch gekennzeichnet, dass** die Massageeinheit wenigstens einen Motor (9) zum Antreiben des wenigstens einen Massageelements (2a) umfasst.

9. Massagevorrichtung nach Anspruch 1, **dadurch gekennzeichnet, dass** ein Positionssensor (10) vorgesehen ist, der das untere Ende des ersten Bereichs erkennt.
10. Massagevorrichtung nach Anspruch 1, **gekennzeichnet durch**, eine Steuerung mit der wahlweise eine Massagefunktion, eine Lordoseunterstützung oder eine Stoppfunktion ausgewählt werden kann, wobei die Massageeinheit bei Auswahl der Massagefunktion in den ersten Bereich (A), bei Auswahl der Lordoseunterstützung in den zweiten Bereich (B) und bei Auswahl der Stoppfunktion in den dritten Bereich (C) fährt.

Revendications

1. Dispositif de massage pour des éléments de mobilier pour s'asseoir ou inclinables, comprenant:

- a. un châssis de base (1),
- b. une unité de massage (2) qui comprend au moins un élément de massage qui peut être entraîné (2a),
- c. et au moins un profil de guidage (3, 4) le long duquel l'unité de massage peut être déplacée par un moteur - afin de réaliser un massage -, le profil de guidage ayant une courbure adaptée aux contours de la colonne vertébrale d'une personne qui doit être massée,

caractérisé en ce que le profil de guidage est divisé en trois régions (A, B, C), dans lequel, dans la première région (A), l'élément de massage (2a) de l'unité de massage permet un massage de la personne qui se tient sur le dispositif de massage; dans la deuxième région (B) l'élément de massage (2a) agit comme un support lombaire; et, dans la troisième région (C), l'élément de massage (2a) atteint une position de repos dans laquelle il n'exerce aucune pression.

2. Dispositif de massage selon la revendication 1, **caractérisé en ce que** la première région (A) est formée par la partie supérieure du profil de guidage, la deuxième région (B) est formée par la partie qui la relie au bas du dispositif, et la troisième région (C) est formée par la partie inférieure du profil de guidage.

3. Dispositif de massage selon la revendication 1, **caractérisé en ce que**, afin de déplacer l'unité de massage (2) le long du profil de guidage (3, 4), des moyens de déplacement (5) sont prévus qui comprennent une fusée (5b) qui peut être entraînée en rotation au moyen d'un dispositif d'entraînement (5a), et au moins un écrou qui peut se déplacer le

long de la fusée, l'unité de massage étant reliée au au moins un écrou.

4. Dispositif de massage selon la revendication 1, **caractérisé en ce que** l'unité de massage comprend une première partie (2b) qui peut être amenée à se déplacer sur une ligne droite au moyen d'un moyen de déplacement (5) et une deuxième partie (2c) qui retient le au moins un élément de massage (2a) et qui est en contact de fonctionnement avec le au moins un profil de guidage (3, 4).

5. Dispositif de massage selon la revendication 4, **caractérisé en ce que** la deuxième partie (2c) est retenue de façon déplaçable sur la première partie (2b).

6. Dispositif de massage selon la revendication 3 et 4, **caractérisé en ce que** deux profils de guidage (3, 4) sont prévus, le long desquels l'unité de massage (2) peut être déplacée.

7. Dispositif de massage selon la revendication 1, **caractérisé en ce que** l'unité de massage (2) est en contact de fonctionnement avec le profil de guidage (3, 4) au moyen de au moins un rouleau (6).

8. Dispositif de massage selon la revendication 1, **caractérisé en ce que** l'unité de massage comprend au moins un moteur (9) pour entraîner le au moins un élément de massage (2a) .

9. Dispositif de massage selon la revendication 1, **caractérisé en ce que** un détecteur de position (10) est prévu, qui reconnaît l'extrémité inférieure de la première région.

10. Dispositif de massage selon la revendication 1, **caractérisé par** une commande par laquelle une fonction de massage, un support lombaire ou une fonction d'arrêt peuvent être sélectionnés selon le cas, dans lequel l'unité de massage se déplace dans la première région (A) quand la fonction de massage est sélectionnée, elle se déplace dans la deuxième région (B) quand le support lombaire est sélectionné, et elle se déplace dans la troisième région (C) quand la fonction d'arrêt est sélectionnée.

Fig. 1

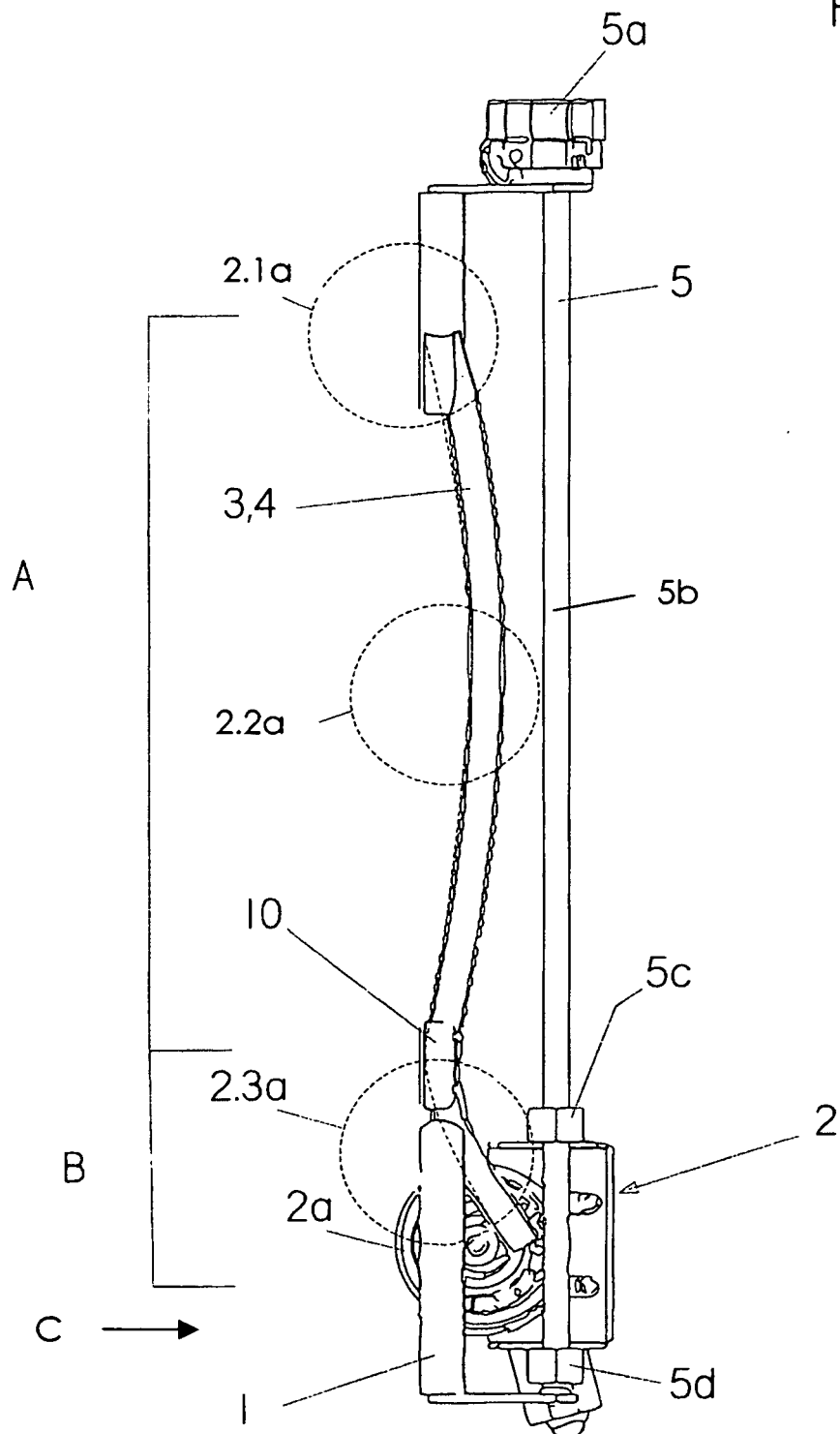


Fig. 2

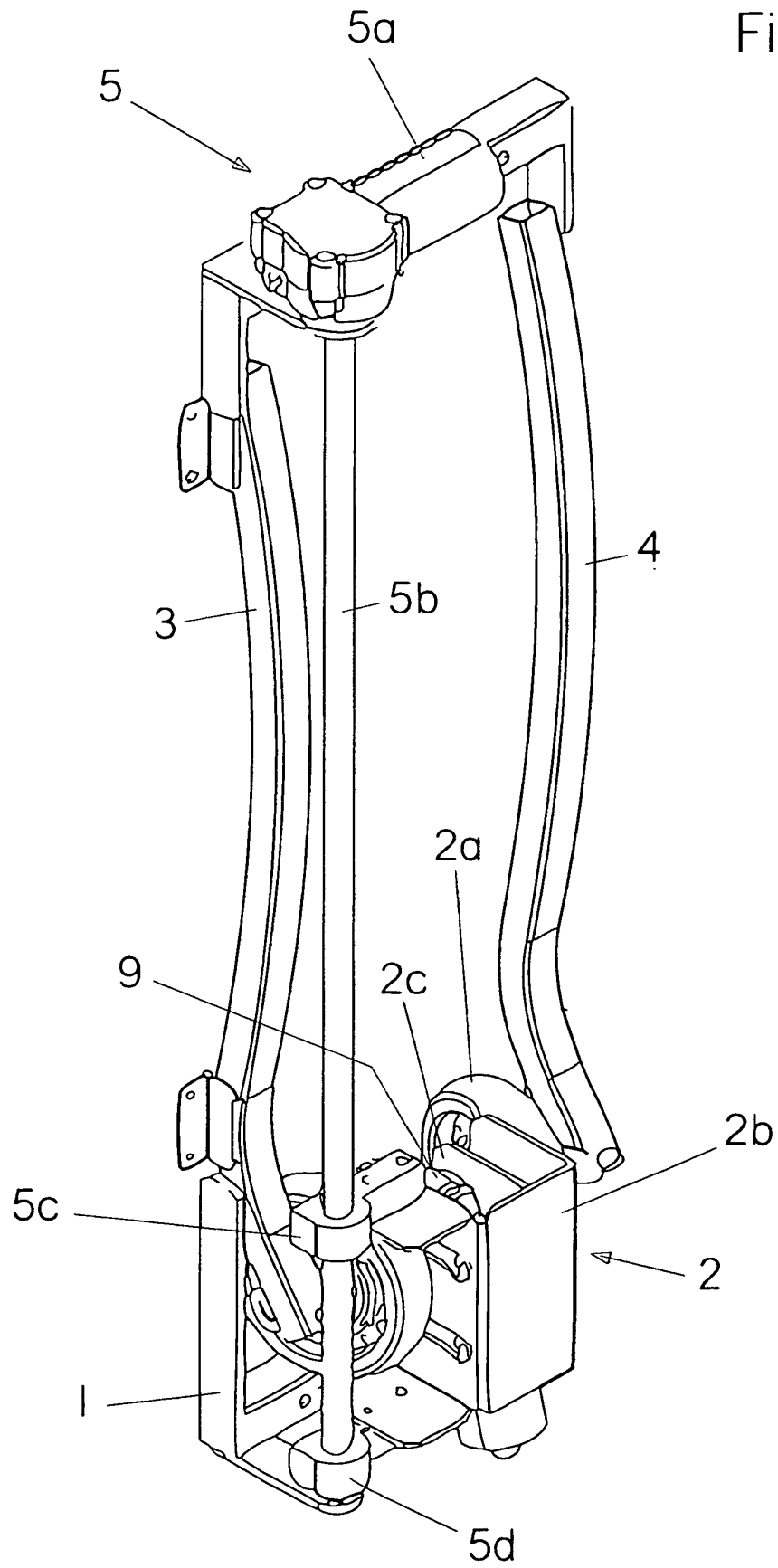
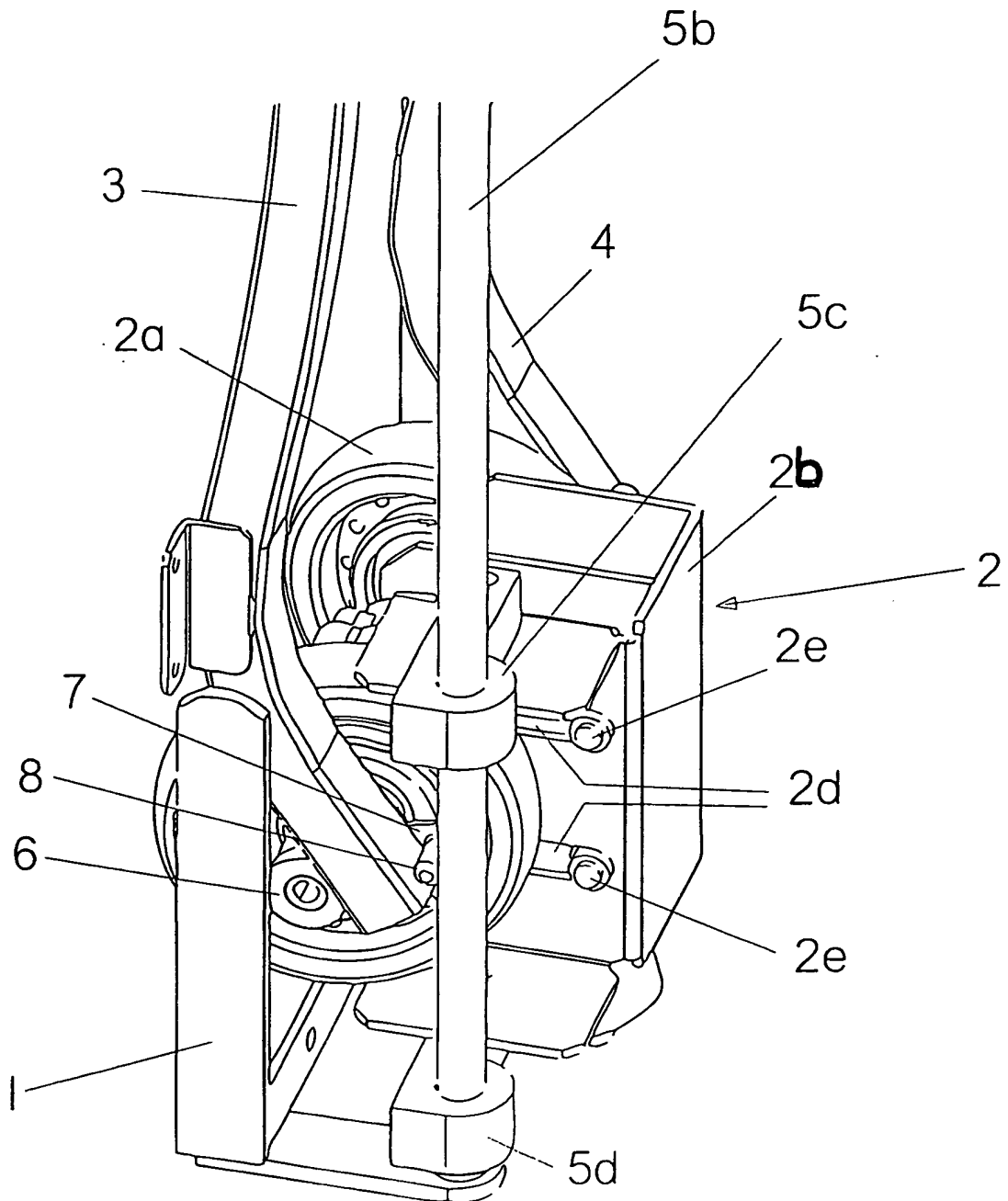


Fig. 3



REFERENCES CITED IN THE DESCRIPTION

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